

LIGHT MODULATION BY FRUSTRATION OF TOTAL INTERNAL REFLECTION

Abstract of Disclosure

Improvements and modifications are provided in the type of frustrated total internal reflection electrophoretic systems described in U.S. Patent No. 6,215,920. The improvements and modifications include (a) conforming the rear electrode to the shape of the front electrode; (b) encapsulating the electrophoretic medium and particles; (c) modifying the viscosity of the electrophoretic medium; (d) polymer coating the electrophoretic particles; (e) use of a high volume fraction of electrophoretic particles; (f) tethering the electrophoretic particles to the reflecting sheet; (g) using particles of varying electrophoretic mobility; (h) controlling the shape of the electrophoretic particles; (i) use of a low refractive index layer over the channel electrode; (j) providing cross-walls within the electrophoretic medium; (k) use of two immiscible liquids as the electrophoretic medium; and (l) replacing the electrophoretic particles with ones containing absorbing and/or scattering centers within a light transmissive matrix.

Figures